

CLAIMS

What is claimed is:

- Sub A1
1. A method for managing network resources, the method comprising the steps of:
    - a) allocating on a server at least one server resource to a client;
    - b) monitoring activity of a user by said client to detect a change in the level of activity;
    - c) transmitting to said server from said client a notification of change of activity; and
    - d) managing at least one said allocated resource on said server in response to said notification.
  2. The method of claim 1 wherein said notification of change of activity is in response to user inactivity.
  3. The method of claim 2 further comprising the step of storing the state of at least one allocated resource such that resumption occurs at substantially said same state in response to a subsequent notification of change of activity.

1    4.    The method of claim 2 further comprising the steps of:

2                e)    terminating transmission of output data to said client associated  
3                with an application executing on said server in response to said notification;

4                f)    storing said output data in a storage area following said  
5                notification; and

6                g)    transmitting said stored output data to said client in response to a  
7                subsequent notification of change of activity.

1    5.    The method of claim 2 further comprising the step of displaying a predefined  
2                display on said client following detection of a change in the level of user activity.

1    6.    The method of claim 5 further comprising the step of transmitting from said  
2                server to said client said predefined display.

1    7.    The method of claim 2 wherein step (d) comprises reducing said at least one  
2                allocated resource on said server in response to said notification.

1    8.    The method of claim 7 further comprising the steps of:  
2                e)    transmitting to said server from said client a second notification of  
3                change of activity; and  
4                f)    resuming said at least one allocated resource on said server in  
5                response to said second notification of change of activity.

1    9.    The method of claim 7 further comprising the step of reducing at least one  
2        allocated resource in the network communication channel associated with  
3        maintaining communication between said server and said client.

1    10.   The method of claim 2 wherein step (d) comprises reducing said at least one  
2        allocated resource to a predetermined level such that when the user resumes activity,  
3        resumption of said pre-reduced allocated resource is substantially transparent to said user.

1    11.   The method of claim 2 wherein step (d) comprises the steps of:

2              (d-a) terminating communication with said client; and  
3              (d-b) reducing said at least one allocated resource associated with  
4        maintaining communication with said client.

1    12.   The method of claim 11 further comprising the steps of:

2              e) re-establishing said communication between said client and said  
3        server; and  
4              f) transmitting to said server from said client a second notification of  
5        change of activity.

1    13.   The method of claim 12 further comprising the step of initiating, by said client,  
2        the re-establishment of said communication between said client and said server.

1    14. A system for managing network resources, the system comprising:  
2                 a server comprising:  
3                         a resource manager; and  
4                         a server communication link in communication with said resource  
5                         manager; and  
6                 a client in communication with said server, said client comprising:  
7                         an activity monitor; and  
8                         a client communication link in communication with said activity monitor,  
9                         wherein said client activity monitor detects a level of activity of a user on  
10                 said client and in response to a change in said level of activity transmits over said  
11                 communication link to said server a notification of change of activity; and  
12                 wherein said server resource manager, in response to said notification,  
13                 manages said at least one server resource associated with said client.

1    15. The system of claim 14 wherein said notification of change of activity represents  
2                 user inactivity.

1    16. The system of claim 14 wherein said server resource manager, in response to said  
2                 notification, reduces at least one server resource associated with said client.

- 1    17. The system of claim 14 wherein said server further comprises a server first  
2    storage buffer in communication with said resource manager,  
3                        wherein said server stores output data generated by an application in said  
4    first storage buffer in response to said notification.
- 1    18. The system of claim 17 wherein said server transmits said output data stored in  
2    said first storage buffer to said client in response to a subsequent notification of  
3    change of activity.
- 1    19. The system of claim 14 wherein said server further comprises:  
2                        a server second storage buffer in communication with said resource  
3    manager,  
4                        wherein said server stores the state of said at least one allocated resource  
5    when said notification is received, for resumption at substantially same said state  
6    in response to a subsequent notification of change of activity.
- 1    20. The system of claim 15 wherein said server further comprises:  
2                        a server display generator in communication with said resource manager,  
3                        wherein said display generator produces a display which said server  
4    transmits to said client and wherein said client displays said display following  
5    detection of a change in the level of activity.
- 1    21. The system of claim 15 wherein said client communication link initiates re-  
2    establishing communication with said server in response to said notification.

- 1    22. A client for monitoring user activity, the client comprising:  
2                 an activity monitor; and  
3                 a communication link in communication with said activity monitor,  
4                 wherein said client activity monitor detects a level of activity of a user on  
5                 said client and in response to a change in said detection transmits over said  
6                 communication link to an external server a notification of change of activity.
- 1    23. The client of claim 22 wherein said notification of change of activity represents  
2                 user inactivity.
- 1    24. The client of claim 22 wherein said client communication link initiates re-  
2                 establishing communication with said server in response to said notification.
- 1    25. The client of claim 22 wherein said activity monitor further comprises:  
2                 a notification generator;  
3                 an inactivity timer in communication with said notification generator; and  
4                 a user detection I/O in communication with said inactivity timer and said  
5                 notification generator,  
6                 wherein said user detection I/O detects lack of activity of a user on said  
7                 client and transmits detection to said inactivity timer and in response to this  
8                 detection said inactivity timer starts counting until it is either reset by detection of  
9                 activity by said user I/O or counts to a predetermined value; and wherein said  
10                notification generator, in response to said inactivity timer reaching said

11 predetermined value transmits over the communication link to an external server a  
12 notification of change of activity.

1 26. The client of claim 25 wherein subsequent to said inactivity timer reaching said  
2 predetermined value, said user detection I/O detects resumption of activity of a  
3 user and in response to this detection, said notification generator transmits over  
4 the communication link to an external server a notification of change of activity.

1 27. A server for managing resources allocated to an external client, the server  
2 comprising:

3 a resource manager; and  
4 a communication link in communication with said resource  
5 manager,

6 wherein said server resource manager, in response to a notification of  
7 change of activity from an external client received over the communication link,  
8 manages said at least one server resource associated with said external client.

1 28. The server of claim 27 wherein said notification of change of activity represents  
2 user inactivity.

1 29. The server of claim 27 wherein said server resource manager, in response to said  
2 notification received over the communication link, reduces at least one server  
3 resource associated with said external client.

- 1    30.    The server of claim 27 wherein said server further comprises:  
2                         a first storage buffer in communication with said resource  
3                         manager,  
4                         wherein said server stores output data generated by an application in said  
5                         first storage buffer in response to said notification.
- 1    31.    The server of claim 30 wherein said server transmits said output data stored in  
2                         said storage buffer to said external client in response to a subsequent notification  
3                         of change of activity.
- 1    32.    The server of claim 27 wherein said server further comprises:  
2                         a storage buffer in communication with said resource manager,  
3                         wherein said server stores the state of said at least one allocated resource  
4                         in said storage buffer , such that when subsequent notification is received in  
5                         response to a change of activity, resumption occurs at substantially said same  
6                         state.
- 1    33.    The server of claim 27 wherein said server further comprises:  
2                         a server display generator in communication with said resource  
3                         manager,  
4                         wherein said display generator produces a display which said server  
5                         transmits to an external client for displaying following detection of a change in  
6                         the level of activity.